

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the claim amendments and following remarks.

Status of Claims

Claims 1-21 are currently pending in the application of which claims 1, 9 and 15 are independent.

In the amendments above, claims 1-3, 9, 10, 12 and 15-17 are amended. Support for the amendments in independent claims 1, 9 and 15 may be found in the specification, at least on page 14, lines 14-17. Other claims are amended to provide proper antecedent basis for the elements recited in the claims. Thus, no new subject matter has been introduced to the originally filed application by the above amendments. Entry thereof is therefore respectfully requested.

Summary of the Office Action

Claims 1-3, 8-9, 15-17 and 20-21 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. 2005/0078656 to Bryant et al. (hereinafter “Bryant”) in view of U.S. Patent No. 6,377,551 to Luo et al. (hereinafter “Luo”).

Claims 4-6 and 18-19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bryant in view of Lou and further in view of U.S. Patent Application Publication No. 2005/0249215 to Kelsey et al. (hereinafter “Kelsey”).

Claims 7 and 10-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bryant in view of Lou and further in view of U.S. Patent Application Publication No. 2005/0068941 to Erhart (hereinafter “Erhart”).

Claims 12-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bryant in view of Luo and Erhart, and further in view of Kelsey.

The aforementioned rejections are respectfully traversed for at least the following reasons.

Drawings

The Office Action did not indicate whether the formal drawings filed with the application have been accepted. Indication of acceptance of the drawings is requested.

Claim Rejection Under 35 U.S.C. §102

The test for determining if a reference anticipates a claim, for purposes of a rejection under 35 U.S.C. § 102, is whether the reference discloses all the elements of the claimed combination, or the mechanical equivalents thereof functioning in substantially the same way to produce substantially the same results. As noted by the Court of Appeals for the Federal Circuit in *Lindemann Maschinenfabrick GmbH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984), in evaluating the sufficiency of an anticipation rejection under 35 U.S.C. § 102, the Court stated:

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.

Therefore, if the cited reference does not disclose each and every element of the claimed invention, then the cited reference fails to anticipate the claimed invention and, thus, the claimed invention is distinguishable over the cited reference.

- **Claims 1-3, 8-9, 15-17 and 20-21:**

Claims 1-3, 8-9, 15-17 and 20-21 were rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Bryant in view of Luo. The rejection is respectfully traversed for at least the following reasons.

- **Independent Claim 1:**

As amended, independent claim 1 recites the following features: (1) defining a set of paths between each pair of switches, each pair comprising a source switch and a destination switch; and (2) recalculating the costs for the previously defined paths using a directed cost protocol by transmitting a directed cost packet down each of the previously defined paths from the destination switch to the source switch for each pair.

Support for the aforementioned features may be found in the specification, at least in Fig. 7 and page 14, lines 3-23. For example, in Fig. 7, switch A is the source switch and switch B is the destination switch. Switch A defines three paths to switch B: 702-1, 702-2, and 702-3 (See page 14, lines 9-14). During recalculation of the cost of the paths, switch B transmits a directed cost packet down each of the three paths previously defined by switch A (See page 14, lines 14-17).

Bryant and Luo, taken individually or in combination, fail to teach or suggest the features recited above.

Bryant discloses a data communications network (Fig. 1) having a plurality of interconnected nodes R1-R5 (See paragraph [0035]). Each node R1-R5 includes a routing table to determine the lowest-cost path from the respective node to a destination node (See paragraphs [0036]-[0038]). When a new node R6 is added to the network, R6 will flood the network with its link information to all nodes R1-R5 (See paragraph [0045]). In response, each node (such as R1) uses its routing table to calculate the lowest-cost path to the new node R6 (See paragraphs [0047]-[0058], especially [0053] and [0054]).

Also, each node (R1) uses its routing table to recalculate the lowest-cost paths from that node (R1) to other nodes (R2-R5) by selecting links that have the lowest cost (See Figs. 6-7 and paragraphs [0059]-[0061]). For example, in Figs. 6 and 7 of Bryant, the lowest cost from node R1 to node R5 is changed to include node R6. Note that at node R3, the path selects link Net8 to node R6, rather than link Net6 to node R5, because the cost of link Net 8 (which is 1) is less than the link Net6 (which is 4).

Thus, in Bryant, during recalculation, a source node (such as R1) searches for the lowest cost in the links to a destination node (R2-R5) one link at a time using its routing table. As such, Bryant fails to transmit a cost packet down each (i.e., all) of previously defined paths from the destination switch to the source switch down, as recited in independent claim 1.

Furthermore, Bryant fails to define a set of paths between each pair of nodes, as recited in claim 1. As indicated above, Bryant determines a path link-by-link to identify only one lowest cost path. Bryant does not define a set of paths, and then calculates and recalculates costs for a pre-defined set of paths.

Luo also fails to teach or suggest the above-mentioned claim features. Luo was cited as allegedly disclosing the recalculation of the costs using a directed cost protocol (See page 5 of the final Office Action). More specifically, the Office Action asserts that the reevaluation step 44 in Fig. 3 is the recalculation recited in claim 1. However, the reevaluation step 44 in Luo is not a recalculation of the costs, as proposed by the Office Action, for at least the following reasons.

Luo discloses a method and system (Fig. 1) for determining a route from a start node (1) to a destination node (6) that has the lowest cost and a delay constraint lower than a predetermined maximum constraint (D) (See col. 2, lines 55-58 and col. 4, lines 12-14). First, the system calculates the delay constraints D_i at each node (See col. 4, lines 14-17, phase I). Then the system calculates the lowest-cost path between the start node 1 and destination node 6 by using an algorithm to build a set “L” of nodes (See col. 4, lines 17-21 and col. 6, lines 8-63). The set L starts out with only the start node 1. From that start node 1, the algorithm determines which nodes are linked to the start node 1, and chooses a node that has the lowest cost and a delay constraint lower than the maximum constraint D. The algorithm then adds that node to the set L (See col. 2, lines 65-67 and col. 6, lines 56-57; and Figs. 7-11). Each time a node is added to the set L, the algorithm reevaluates to determine whether that node is the destination node 6 (step 44 in Fig. 3; col. 6, lines 30-33). If the added node is the destination node 6, the path is complete and the algorithm stops (See col. 6, lines 56-57). If the added node is not the destination node 6, the algorithm continues adding another node to the set L until the destination node 6 is added thereto. At the end, the set L has a string of nodes going from the start node 1 to the destination node 6 with the lowest cost and delay constraint lower than the maximum constraint D. For example, as shown in

Fig. 11, the lowest path from node 1 to node 6 is the set L of nodes 1-4-3-6 (See col. 6, lines 58-63).

Thus, Luo teaches how to calculate the lowest cost for a route between two nodes, but Luo fails to teach recalculating the costs of the route. Luo fails to teach or suggest the recalculating of the cost of the previously defined paths using a directed cost protocol, as recited in claim 1. The Office Action alleges that the reevaluation step 44 in Fig. 3 is the recalculation recited in claim 1. However, the reevaluation step 44 in Fig. 3 of Luo is to determine whether the destination node 6 is included in the set L. Such a determination has nothing related to recalculating the cost of previously defined paths.

Moreover, Luo fails to teach or suggest transmitting a cost packet down the set of previously defined paths from the destination node to the source node, as recited in claim 1. In Luo, the reevaluation step 44 in Fig. 3 determines whether the destination node 6 is included in the set L. In that determining step, no cost packet is being transmitted down any paths, much less transmitted from the destination node down a set of paths to the source node. As a result, Luo fails to teach or suggest the “transmitting” feature, as recited in claim 1.

For at least the foregoing reasons, Luo fails to cure the deficiencies of Bryant. As a result, Bryant and Luo, taken individually or in combination, fail to teach each and every feature of independent claim 1 and thus cannot anticipate claim 1. It is therefore respectfully requested that the rejection of claim 1 be withdrawn, and claim 1 be allowed.

- Independent Claims 9 and 15:

Independent claims 9 and 15 recite features similar to the aforementioned features of claim 1. Therefore, independent claims 9 and 15 are believed to be allowable over Bryant in

view of Luo for at least the same reasons set forth above with respect to independent claim 1.

It is therefore respectfully requested that the rejection of claims 9 and 15 be withdrawn and claims 9 and 15 be allowed.

- Dependent Claims 2-3, 8, 16-17 and 20-21:

Because claims 2-3, 8, 16-17 and 20-21 depend from either independent claims 1, 9 and 15, they are also allowable over the cited documents of record for at least the same reasons set forth above.

- The Rejection under 35 U.S.C. §102(e) Is Improper:

The Office Action rejects claims 1-3, 8-9, 15-17 and 20-21 under 35 U.S.C. §102(e) as being anticipated by Bryant in view of Luo. It is respectfully submitted that the rejection of the claims under Section 102 of 35 U.S.C. is improper.

Under 35 U.S.C. §102(e), an applicant shall be entitled to a patent unless the invention was described in an application for patent, published under section 122(b), “by another.” *See* 35 U.S.C. §102(e). Because of the words “by another,” a rejection of a claim under 35 U.S.C. § 102(e) requires that the rejection be based on only one single prior art reference, not a combination of a plurality of references. As noted by the Court of Appeals for the Federal Circuit in *Lindemann Maschinenfabrick GmbH v. American Hoist and Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984), in evaluating the sufficiency of an anticipation rejection under 35 U.S.C. § 102, the Court stated:

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.

Thus, if one single cited reference does not disclose each and every element of the claimed invention, the cited reference fails to anticipate the claimed invention. In other words, if the rejection of a claim is based on a combination of two or more references, it is improper to use 35 U.S.C. § 102(e) to rejection the claim.

In the present application, the Office Action rejects claims 1-3, 8-9, 15-17 and 20-21 under 35 U.S.C. §102(e) but combines two documents, Bryant and Luo, to reject the claims. Individually, Bryant and Luo fail to disclose all of the features recited in the claims. For instance, the Office Action admits that Bryant fails to explicitly disclose the recalculation using a directed cost protocol, recited in the claims (See final Office Action, page 2, last line). The Office Action also provides a motivation to combine Bryant and Luo (“it provides an improved route computation algorithm,” see final Office Action, page 3). Accordingly, neither Bryant nor Luo anticipates the claims.

In view of the patent law discussed above, it is respectfully submitted that the rejection of claims 1-3, 8-9, 15-17 and 20-21 under 35 U.S.C. §102(e) is improper. Therefore, withdrawal of the rejection is requested.

In “Response to Arguments” in the final Office Action, the Examiner argues that the Examiner still believes Bryant itself suggests the limitation “directed” although it does not use the literal word “directed” (See final Office Action, page 11). However, such an argument is respectfully traversed because that argument is contradictory to the combination of Bryant and Luo in the rejection of claim 1 on pages 2-3 of the final Office Action. In that rejection, the Office Action specifically admits that Bryant fails to explicitly disclose a recalculation of a directed cost protocol, and that it would have been obvious to one skilled in

the art to combine Bryant with Luo to improve the route computation algorithm for communication network (See final Office Action, pages 2-3).

Claim Rejections under 35 U.S.C. §103(a)

The test for determining if a claim is rendered obvious by one or more references for purposes of a rejection under 35 U.S.C. § 103 is set forth in *KSR International Co. v. Teleflex Inc.*, 550 U.S.398, 82 USPQ2d 1385 (2007):

“Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.” Quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966).

As set forth in MPEP 2143.03, to ascertain the differences between the prior art and the claims at issue, “[a]ll claim limitations must be considered” because “all words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385. According to the Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in view of *KSR International Co. v. Teleflex Inc.*, Federal Register, Vol. 72, No. 195, 57526, 57529 (October 10, 2007), once the *Graham* factual inquiries are resolved, there must be a determination of whether the claimed invention would have been obvious to one of ordinary skill in the art based on any one of the following proper rationales:

- (A) Combining prior art elements according to known methods to yield predictable results;
- (B) Simple substitution of one known element for another to obtain predictable results;
- (C) Use of known technique to improve similar devices (methods, or products) in the same way;
- (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- (E) “Obvious to try”—choosing from a finite number of identified, predictable solutions,

with a reasonable expectation of success; (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art; (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007).

Furthermore, as set forth in *KSR International Co. v. Teleflex Inc.*, quoting from *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006), “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasonings with some rational underpinning to support the legal conclusion of obviousness.”

Therefore, if the above-identified criteria and rationales are not met, then the cited reference(s) fails to render obvious the claimed invention and, thus, the claimed invention is distinguishable over the cited reference(s).

- **Claims 4-7, 10-14 and 18-19:**

Claims 4-6 and 18-19 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Bryant in view of Lou and Kelsey.

Claims 7 and 10-11 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Bryant in view of Lou and Erhart.

Claims 12-14 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Bryant in view of Luo, Erhart and Kelsey.

The rejections above are respectfully traversed for at least the following reasons.

As discussed above, the proposed combination of Bryant and Luo fails to disclose all of the features of independent claims 1, 9 and 15. In setting forth the rejection of claims 4-7, 10-14 and 18-19, the Office Action has not and cannot reasonably assert that the disclosures

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contained in Kelsey and Erhart make up for any of the deficiencies discussed above with respect to the proposed combination. Accordingly, the proposed modification to the combination of Bryant and Luo utilizing the teaching of Kelsey and Erhart would still fail to yield all of the features of independent claims 1, 9 and 15.

For at least the foregoing reasons, the Office Action has failed to establish that claims 4-7, 10-14 and 18-19 are *prima facie* obvious in view of the combined disclosures contained in Bryant, Luo, Kelsey and/or Erhart as proposed in the Office Action. The Examiner is therefore respectfully requested to withdraw the rejection of claims 4-7, 10-14 and 18-19 and to allow these claims.

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Conclusion

In light of the foregoing, withdrawal of the rejections of record and allowance of this application are earnestly solicited. Should the Examiner believe that a telephone conference with the undersigned would assist in resolving any issues pertaining to the allowability of the above-identified application, please contact the undersigned at the telephone number listed below. Please grant any required extensions of time and charge any fees due in connection with this request to Deposit Account No. 08-2025.

Respectfully submitted,

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By



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